State Of California

Memorandum

The Resources Agency of California

Date: November 30, 2006
Telephone: (916) 654-4679

File: 06-AFC-7

To: Commissioner John Geesman, Presiding Member
Commissioner Jeffrey Byron, Associate Member

From: California Energy Commission -
1516 Ninth Street
Sacramento, CA 95814-5512

John S. Kessler
Siting Project Manager

Subject: **HUMBOLDT BAY REPOWERING PROJECT (06-AFC-7)**
ISSUES IDENTIFICATION REPORT

Attached is staff's Issues Identification Report for the Humboldt Bay Repowering Project (06-AFC-7). This report serves as a preliminary scoping document that identifies the issues that Energy Commission staff believes will require careful attention and consideration. Energy Commission staff will present the issues report at the Informational Hearing and Site Visit to be held on December 18, 2006.

cc: Docket (06-AFC-7)
Proof of Service List

Attachment

HUMBOLDT BAY REPOWERING PROJECT

(06-AFC-7)

November 30, 2006

ISSUES IDENTIFICATION REPORT

CALIFORNIA ENERGY COMMISSION

Energy Facilities Siting Division

ISSUES IDENTIFICATION REPORT
HUMBOLDT BAY REPOWERING PROJECT

(06-AFC-7)

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ISSUES IDENTIFICATION REPORT

California Energy Commission Staff

This report has been prepared by the California Energy Commission staff to inform the Committee and all interested parties of the potential issues that have been identified in the case thus far. These issues have been identified as a result of our discussions with federal, state, and local agencies, and our review of the Humboldt Bay Repowering Project Application for Certification (AFC), Docket Number 06-AFC-7. The Issues Identification Report contains a project description, summary of potentially significant environmental issues, and a discussion of the proposed project schedule. The staff will address the status of issues and progress towards their resolution in periodic status reports to the Committee.

PROJECT DESCRIPTION

On September 29, 2006, Pacific Gas and Electric Company (PG&E) filed an AFC for the Humboldt Bay Repowering Project (HBRP), seeking approval from the California Energy Commission to construct and operate a nominal 163 megawatt (MW) power plant. On November 3, 2006, PG&E filed a Supplement to the AFC, and on November 8, 2006, the Energy Commission accepted the AFC (06-AFC-7) with supplemental information as complete. This determination initiated Energy Commission staff's independent analysis of the proposed project.

In order to construct the HBRP, it would be necessary to remove several structures associated with the existing Humboldt Bay Power Plant including the Painting and Sandblasting Building, two storage sheds, one 115-kilovolt (kV) transmission tower, diesel fuel tanks and related underground piping and infrastructure. The HBRP would consist of ten (10) natural gas-fired Wärtsilä 18V50DF 16.3 megawatt (MW) reciprocating engine-generator sets and associated equipment with a combined nominal generating capacity of 163 MW.

The reciprocating engine is very similar to a conventional automobile engine, containing 18 cylinders in a V-formation. During normal operation, the engines use natural gas as fuel, with a very small amount of diesel fuel injected through a micro-pilot system to ignite the natural gas in the cylinders. During emergencies and times of natural gas curtailment, the engines use diesel fuel supplied through a separate, conventional injection system. The dual-fuel technology is capable of operating at up to 48 percent efficiency. Auxiliary equipment would include inlet air filters, gas exhaust silencer stacks, air radiator cooling array, generator step-up and auxiliary transformers and emergency diesel fuel storage tanks.

Associated equipment would also include emission control systems applied to each engine's exhaust necessary to meet the proposed emission limits. Each system would consist of a selective catalytic reduction unit for oxides of nitrogen (NOx) control and an oxidation catalyst unit for carbon monoxide (CO) and volatile organic compounds (VOC) control.

The proposed HBRP site is located at 1000 King Salmon Avenue, approximately 3 miles south of the City of Eureka in an unincorporated area of Humboldt County. The project is within the sphere of influence of the City of Eureka, and would be located on 5.4 acres

within a 143-acre parcel currently occupied by the existing PG&E Humboldt Bay Power Plant (HBPP). The site is zoned Coastal-Dependent Industrial and is within the jurisdiction of the California Coastal Commission, as well as City of Eureka and Humboldt County.

The HBRP proposes using approximately 2,400 gallons of water per day (2.7 acre-feet/year) on average for cooling or other industrial purposes. The engines would use an air radiator cooling system in a closed loop system (similar to automobiles). Raw water for industrial processes and site landscape irrigation would be supplied from PG&E's existing ground water well via a direct connection to an onsite 6-inch-diameter water pipeline.

Potable water demands would average about 160 gallons per day (0.2 acre-feet/year) as required for non-process uses (i.e., sinks, toilets, showers, drinking fountains, eye wash/safety showers, etc.). Potable water would be supplied from a new 4- to 6-inch-diameter on-site pipeline running 1200 feet to a connection with the existing Humboldt Community Services District (HCSD) line that runs along King Salmon Avenue.

The HBRP would discharge process and sanitary wastewater into the HCSD sanitary sewer system at an average rate of about 860 gallons per day. Process wastewater would collect from area washdown, sample drains and drainage from facility equipment areas. Sanitary wastewater would collect from sinks, toilets, showers and other sanitary facilities. Both process and sanitary wastewater would be conveyed to the existing 4-inch diameter wastewater pipeline, which interconnects to a pipeline to the HCSD sewer system. The new stormwater collection system and outfall would route non-contaminated stormwater to enhance wetland restoration areas adjacent to the southeast boundary of the HBRP site.

The HBRP would be connected to PG&E's existing HBPP switchyard via 13.8 kV cables and bus work from the generator circuit breakers to new step-up transformers, and then via two 60-kV tie lines and one 115-kV tie line into the switchyard. Four of the generating units would feed into the 115 kV line, and the remaining 6 units would feed into the 60-kV lines. Switchyard improvements would include replacement of the existing 60 kV and 115 kV circuit breakers, and replacement of a 115 kV steel lattice tower with 3 steel poles. No new transmission facilities would be necessary beyond the switchyard.

Natural gas would be supplied to the HBRP via an onsite 10-inch diameter, high-pressure, natural gas pipeline owned and operated by PG&E. The natural gas would flow through gas scrubber/filter equipment, a gas pressure control station, and a flow-regulating station prior to entering the reciprocating engines.

The construction workforce would average 101 workers per month, and would peak during the sixth through ninth months with up to 236 workers onsite. Construction costs are estimated to be $250 million.

If approved by the Energy Commission, PG&E proposes to initiate construction of the HBRP in Spring 2008. The project is expected to take about 18 months for construction and startup testing, and could begin commercial operation as early as Fall 2009, if there are no delays.

POTENTIAL MAJOR ISSUES

This portion of the report contains a discussion of the potential issues the Energy Commission staff has identified to date. The Committee should be aware that this report might not include all of the significant issues that may arise during the case. Discovery is not yet complete, and other parties have not had an opportunity to identify their concerns. The identification of the potential issue contained in this report is based on comments of other government agencies and on our judgment of whether any of the following circumstances will occur:

1. Potential significant impacts which may be difficult to mitigate;
2. Potential areas of noncompliance with applicable laws, ordinances, regulations or standards (LORS);
3. Areas of conflict or potential conflict between the parties; or
4. Areas where resolution may be difficult or may affect the schedule.

The following table lists all the subject areas evaluated and notes the Air Quality area where the potentially significant issues have been identified. Even though an area is identified as having no potential issues, it does not mean that an issue will not arise related to the subject area.

Major Issue	Subject Area	Major Issue	Subject Area
Yes	Air Quality	No	Paleontological Resources
No	Biological Resources	No	Public Health
No	Cultural Resources	No	Socioeconomics
No	Efficiency and Reliability	No	Soils
No	Electromagnetic Fields & Health Effects	No	Traffic and Transportation
No	Facility Design	No	Transmission Line Safety
No	Geology	No	Transmission System Engineering
No	Hazardous Materials	No	Visual Resources
No	Industrial Safety and Fire Protection	No	Waste
No	Land Use	No	Water Resources
No	Project Overview	No	Alternatives
No	Noise		

This report does not limit the scope of staff's analysis throughout this proceeding, but acts to aid in the analysis of the potentially significant issues that the HBRP proposal poses. The following discussion summarizes the potential issues, identifies the parties needed to resolve the issues, and where applicable, suggests a process for achieving resolution. At this time, staff does not see these potential issues as non-resolvable.

AIR QUALITY

Humboldt Bay Repowering Project (HBRP) would be located in the North Coast Unified Air Quality Management District (Air District) where particulate matter occurs at levels that exceed the federal ambient air quality standards.

Fine Particulate Matter - New Federal PM2.5 Standard

The U.S. EPA recently revised the national ambient air quality standards (NAAQS) for particulate matter less than 2.5 micrometers (PM2.5) downward from 65 micrograms per cubic meter ($\mu g/m^3$) to 35 $\mu g/m^3$ for the 24-hour average concentration (see Federal Register Vol. 71, No. 200, p. 61144, October 17, 2006; effective December 18, 2006). According to the AFC, operation of the proposed project would not cause a violation of the new NAAQS. However, staff believes there may be erroneous assumptions in the AFC's analysis of particulate matter impacts, especially during a 24-hour period of emergency operation in which the power plant would use diesel fuel. Staff expects to review the assumptions shown in the AFC in detail to determine whether the project would likely cause a violation of the new PM2.5 NAAQS during diesel fuel firing. If correcting errors reveals that the project impact would exceed the new NAAQS, this would be a potentially significant impact. Staff will be providing data requests regarding the applicant's PM 2.5 emission assumptions.

Fuel Supply and Emission Limits

The primary fuel for the proposed project would be natural gas, but the proposed project would use diesel fuel during shortfalls of natural gas supplies which have often occurred during the winter in Humboldt County (AFC Section 2.7.3). To plan for fuel supply constraints, the applicant states that the engines would operate a maximum of 800 hours per engine per year on diesel fuel for "reasonably foreseeable" emergencies (AFC page 8.1-30). It is not clear how diesel fuel use would be minimized and what steps would be taken to avoid possible excursions of the annual operating limits. Operation of HBRP would be dictated by electricity grid reliability requirements, and it is not clear how the proposed plant-wide fuel use limitation (AFC Table 8.1-14) would be enforced if there becomes a need for HBRP to operate beyond the proposed 70 percent capacity factor due to reliability requirements. Staff is concerned that natural gas shortfalls or forced operation for reliability requirements, both of which are outside the control of the applicant, could lead to HBRP exceeding its proposed fuel use or emission limitations. Being forced to operate the plant beyond its proposed fuel use limitation or for more hours on diesel fuel than expected, could lead to air quality impacts that would be difficult to mitigate. Staff will be providing data requests addressing emergency fuel use scenarios and related emission limitations.

SCHEDULING

Overall, the preliminary schedule reflects accomplishing the processing of the HBRP AFC within the Commission's normal 12-month AFC schedule. The schedule is dependent upon receiving a Final Determination of Compliance (FDOC) from the Air District within 180 days of the AFC being accepted, as mandated by our statute and regulations. (Pub. Resources Code §25519(h); Cal. Code Regs., tit. 20, §1744.5(b).) The Air District has indicated that at this time, it believes it will be able to issue the FDOC according to our regulations. Staff will continue to work closely with the Air District to support the efficient processing of the HBRP application and analysis of air quality impacts, as well as carefully coordinating staff's activities to ultimately achieve a 12-month AFC schedule for HBRP.

Specific to the issue concerning particulate matter and emission limits, timely resolution is also key to maintaining the current project schedule for both staff's analysis, and likely the Air District's in preparing their Preliminary and Final Determinations of Compliance. It is staff's belief that these issues can likely be resolved in the course of conducting the currently-scheduled Data Request Workshop on December 18, 2006, followed by a Data Response & Issue Resolution Workshop during late January or early February 2007 if needed. Staff's proposed 12-month schedule is as follows:

STAFF'S PRELIMINARY SCHEDULE - HUMBOLDT BAY REPOWERING PROJECT (06-AFC-7)

EVENT	DATE
Applicant files Application for Certification (AFC)	9/29/06
Executive Director's recommendation on data adequacy	10/26/06
Decision on data adequacy at the Business Meeting	11/8/06
Staff files Issue Identification Report	11/30/06
Staff files data requests	12/1/06
Information Hearing, Site Visit & Data Request Workshop	12/18/06
Applicant provides data responses	1/5/07
Data response and issue resolution workshop	1/24/07
Local, state and federal agency draft determinations & NCAQMD PDOC	3/8/07
Preliminary Staff Assessment (PSA) filed	4/7/07
Staff Assessment workshop	5/2/07
Local, state and federal agency final determinations & NCAQMD FDOC	5/7/07
Final Staff Assessment filed	6/6/07
Evidentiary hearings*	TBD
Committee files proposed decision*	TBD
Hearing on the proposed decision*	TBD
Committee files revised proposed decision*	TBD
Commission Decision	11/8/07

* The assigned Committee will determine this part of the schedule.